



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

September 30, 2005

Reply to
Attn Of: OWW-131

Barry Burnell
Water Quality Programs Administrator
Idaho Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706-1255

Re: Approval of Updated Numeric Criteria for Arsenic, Cadmium, Chromium, Nickel, Antimony, Zinc, and New Methyl Mercury Fish Tissue Human Health Criteria, Docket No. 58-0102-0302

Dear Mr. Burnell:

The Environmental Protection Agency (EPA) has reviewed Idaho Department of Environmental Quality's (DEQ) revised water quality standards, contained in Docket 58-0102-0302 pursuant to our authority under Section 303(c) of the Clean Water Act (CWA) and the implementing regulations at 40 CFR Part 131. In accordance with these authorities, EPA is approving the following numeric criteria for toxic substances contained in Idaho's Water Quality Standards and Wastewater Treatment Requirements at IDAPA 58.0102.210:

	Aquatic Life Criteria (ug/l)		Human Health Criteria (ug/l)	
	acute	chronic	water/organisms	organisms only
Antimony			5.6	640
Arsenic	340	150		
Cadmium	2			
Chromium III	570	74		
Chromium VI	16	11		
Methyl mercury			0.3mg/kg in fish tissue	
Nickel	470	52		
Zinc	120	120	7400	26,000

These updates and revisions to Idaho's numeric criteria for these toxic pollutants are identical to EPA's most current nationally recommended water quality criteria. EPA commends your successful efforts in updating a selected group of Idaho's numeric toxic

criteria, and the adoption of a fish tissue based methyl mercury human health criterion as well as the development of Idaho's implementation guidance for mercury (Implementation Guidance for the Idaho Mercury Water Quality Criteria, April 2005).

EPA is currently in the process of reviewing the final Implementation Guidance for the Idaho Mercury Quality Criteria, with respect to the State of Idaho's approach to implementation of a fish tissue human health criterion for methyl mercury. We expect to have this review completed shortly and will provide you with our comments at that time. As you know, EPA provided DEQ with extensive written comments to the draft Implementation Guidance as an enclosure to our letter of September 20, 2004, which we submitted during the public comment period. We are optimistic that DEQ has appropriately addressed and/or incorporated our comments into the final version.

EPA has reviewed DEQ's removal of the acute and chronic numeric aquatic life criteria for mercury and the substitution of a narrative criterion (adding footnote "g" in the place of a value for the acute and chronic criteria). Based on our initial review of Chapter 7 of Idaho's Implementation Guidance for the Idaho Mercury Water Quality Criteria, April 2005, we believe additional information is needed in order to determine if the human health criterion provides sufficient protection for Idaho's aquatic life use designations. When we complete our review we will provide you with the specific additional information needed for EPA to complete a review of Idaho's justification. Among the additional information which will be required are implementation procedures for the narrative criteria "no toxics in toxic amounts". Idaho will need to provide EPA with specific procedures on how the State intends to implement the narrative criteria so as to provide full protection from any harmful effects from mercury for all of Idaho's aquatic life uses.

For the reasons noted above, Idaho's submittal with respect to the removal of numeric aquatic life criteria for mercury, is incomplete at this time. Therefore, EPA is not taking action. Idaho's previous acute and chronic aquatic life criteria for mercury are still the effective criteria for Clean Water Act purposes until EPA takes action on Idaho's revision removing the mercury aquatic life criteria.

Background

In October 2003, DEQ initiated negotiated rulemaking to address a petition from the Idaho Mining Association to update Idaho's mercury criteria. The negotiated rulemaking culminated in DEQ proposing to update a selected list of numeric criteria for toxic pollutants primarily based on EPA's most current criteria recommendations for these pollutants, along with a draft implementation guidance document for the methyl mercury fish tissue based human health criterion.

Additionally, DEQ proposed that rather than adopt EPA's most current freshwater aquatic life criteria recommendations for inorganic mercury they would withdraw their current acute and chronic freshwater aquatic life criteria for inorganic mercury and replace these criteria with a footnote stating in part, that the narrative criteria for toxics

applies and DEQ believes application of the human health criterion for methyl mercury will be protective of aquatic life in most situations.

Also included in this proposed rule, was the removal of Idaho's previous low end hardness cap of 25 mg/liter used in calculating hardness-dependent metals criteria (copper, zinc, cadmium, silver, lead, chromium II and nickel). Removal of the cap is consistent with EPA's latest guidance on the calculation of criteria for these metals. DEQ published the proposed rule in the Idaho Administrative Bulletin on August 4, 2004 and provided a 45 day public comment period.

During the public comment period, EPA submitted comments to DEQ which in part stated that EPA supported DEQ's efforts to adopt numeric criteria consistent with EPA's latest criteria recommendations. As to mercury, EPA commented that we were not supportive of Idaho removing the current aquatic life criteria for inorganic mercury, leaving in place the narrative criterion of "no toxics in toxic amounts." EPA stated our recommended approach for appropriately protective aquatic life criteria for mercury in Idaho waters is the adoption of EPA's current recommended acute aquatic life criterion of 1.4 ug/l and for DEQ to retain the current chronic criterion of 0.012 ug/l. This approach is being used in Oregon as well as the State of Georgia. Lastly, EPA commented that the Agency's latest guidance on the calculation of hardness-dependent metals criteria recommends that the hardness not be capped at 25 mg/L or any other hardness on the low end (p. 7-9 in National Recommended Water Quality Criteria: 2002, November 2002).

In response to public comment, DEQ revised the proposed rule to include a 10mg/L low end hardness cap to be used when calculating hardness dependent metals criteria. DEQ made no other changes to the proposed rule in response to comments. The revised rule was considered by the Idaho Board of Environmental Quality on November 18, 2004. The Board did not agree with DEQ that a change in the low end hardness cap was supported and disapproved both the initial proposal of no low end cap and the revised proposal of a 10 mg/L cap. Disapproval by the Board of this proposed revision left the current 25 mg/L low end hardness cap in place. The final rule was then approved and adopted by the 2005 Idaho Legislature effective April 6, 2005.

By letter dated August 8, 2005, DEQ submitted these revised water quality standards contained in Docket 58-0102-0302 to EPA for review. This submission was received by EPA on August 11, 2005. The revised provisions, contained in the Idaho Water Quality Standards at IDAPA 58.0102.210, include:

- Updated Human Health Criteria for Antimony
- Updated Acute and Chronic Aquatic Life Criteria for Arsenic
- Updated Acute Aquatic Life Criteria for Cadmium
- Updated Acute and Chronic Aquatic Life Criteria for Chromium III
- Updated Acute and Chronic Aquatic Life Criteria for Chromium VI
- Updated Acute and Chronic Aquatic Life Criteria for Nickel
- Updated Acute and Chronic Aquatic Life Criteria for Zinc

- Updated Human Health Criteria for Zinc
- New Human Health Criterion for Methyl Mercury
- Removal of Acute and Chronic Aquatic Life Criteria for Mercury and replacement with footnote “g” to the criteria table
- Addition of footnote “q” which relates to the methyl mercury criteria
- Updates to several of the values in the Table of Factors for Calculating Hardness Dependent Metals for Cadmium, Chromium III , Nickel and Zinc
- Addition of Subsection 210.03.c.iv. “Implementation Guidance for the Idaho Mercury Water Quality Criteria”

In addition to the revised water quality standards, DEQ submitted a technical justification document which provides a discussion of the basis for these revisions along with several other documents which provided background information as well as analyses of several of the issues. These documents include:

- Memorandum from Stratus Consulting on evaluation of low hardness extrapolation of water quality criteria
- Memorandum from Chadwick Consultants regarding a review of the Stratus memo
- Summary of DEQ Negotiated Rulemaking on Mercury and other Metals Criteria
- Aquatic Life Criteria Updates Proposed for Adoption in Idaho
- Response to Comments Document on Update of Criteria for Mercury and other Metals
- Response to Comments Document on the July 2004 Draft of the Implementation Guidance for the Idaho Mercury Water Quality Criteria
- Implementation Guidance for the Idaho Mercury Water Quality Criteria, April 2005

Determination

The federal water quality standards regulations at 40 CFR 131.11, in part, state that States must adopt water quality criteria that protect the designated use. Further, such criteria must be based on sound scientific rationale. In establishing criteria, States should establish numerical criteria values based on 1) EPA’s 304(a) Guidance or 2) 304(a) Guidance modified to reflect site-specific conditions, or 3) other scientifically defensible methods.

EPA has reviewed DEQ’s water quality standards revisions along with the documents submitted and identified above. EPA compared the numeric criteria in these revisions to EPA’s updated compilation of national recommended water quality criteria for pollutants which is contained in the 2004 compilation of National Recommended Water Quality Criteria. Based on our review, EPA has determined that the numeric criteria for the following pollutants are consistent with EPA’s latest 304(a) criteria recommendations:

- Human Health Criteria for Antimony,
- Acute and Chronic Aquatic Life Criteria for Arsenic
- Acute Aquatic Life Criteria for Cadmium
- Acute and Chronic Aquatic Life Criteria for Chromium III
- Acute and Chronic Aquatic Life Criteria for Chromium VI
- Acute and Chronic Aquatic Life Criteria for Nickel
- Acute and Chronic Aquatic Life Criteria for Zinc
- Human Health Criteria for Zinc
- Human Health Criterion for Methyl Mercury

In addition, the revised values found at 58.01.02.210.02 in the “Table of Factors for Calculating Hardness Dependent Metals” for cadmium, chromium III, nickel and zinc are consistent with EPA’s recommended 304(a) guidance as contained in the criteria documents for each of these pollutants. Further, the addition of Subsection 210.03.c.iv. incorporates by reference Idaho’s “Implementation Guidance for the Idaho Mercury Water Quality Criteria”. This guidance document is both useful and necessary in order to implement Idaho’s fish tissue based human health criterion for methyl mercury.

The adoption of these numeric criteria are consistent with EPA’s requirements at 40 CFR 131.11(a) and (b). Therefore, in accordance with Section 303(c) of the Clean Water Act and the implementing regulations at 40 CFR Part 131, EPA approves the numeric criteria for the following: both human health criteria for antimony, and zinc, and human health criterion for methyl mercury, acute aquatic life criteria for cadmium, acute and chronic aquatic life criteria for arsenic, chromium III, chromium VI, nickel, and zinc as well as the associated revised values for calculating hardness dependent metals criteria for cadmium, chromium III, nickel and zinc contained in IDAPA 58.01.01.210.02.

Section 7 of the Endangered Species Act requires federal agencies to consult with the U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration (NOAA) - Fisheries, (the Services) on federal actions which may have the potential to affect listed and proposed endangered and threatened species, and listed habitat.

This approval is being made subject to the results of consultation under Section 7(a)(2) of the Endangered Species Act (ESA). By approving the standards “subject to the results of consultation under Section 7(a)(2) of the Endangered Species Act,” EPA has explicitly stated that it retains its discretion to take appropriate action if the consultation identifies deficiencies in the standards requiring remedial action by EPA. EPA retains the full range of options available under § 303(c) for ensuring water quality standards are environmentally protective.

Recommendation with Respect to Hardness Dependent Metals

Freshwater aquatic life criteria for certain metals are expressed as a function of hardness because hardness can affect the toxicities of these metals. Generally, decreasing

hardness has the effect of increasing toxicity of metals. EPA's latest recommendation with respect to hardness values in calculating criteria for these hardness dependent metals (cadmium, chromium III, copper, lead, nickel, silver and zinc) is to not cap the hardness at 25 mg/L. This recommendation is discussed in the 2002 compilation of National Recommended Water Quality Criteria (See pages 7-9 of National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047).

We are concerned that placing a low end cap on hardness may result in criteria that provide less protection than intended by EPA's 1985 Guidelines for Aquatic Life Criteria. Therefore EPA is taking this opportunity to recommend that DEQ re-consider removing its low-end hardness cap for hardness-dependent metals. This recommendation regarding existing water quality standards for a hardness cap is not a disapproval or determination under Clean Water Act section 303(c).

Please feel free to contact me at (206) 553-7151 if you have questions concerning this letter or Lisa Macchio, Idaho Water Quality Standards Coordinator at (206) 553-1834.

Sincerely,

/s/ September 30, 2005

Michael F. Gearheard, Director
Office of Water and Watersheds

cc: Michael McIntyre, IDEQ
Don Essig, IDEQ

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Sincerely,

Michael F. Gearheard
Director, Office of Water and Watersheds

cc: Michael McIntyre, IDEQ
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